

IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF PENNSYLVANIA

AMERANTH, INC.)
Plaintiff,) Civil Action No. 2:22-cv-1776
v.)
DOORDASH, INC.)
Defendant.)
) **COMPLAINT FOR**
) **PATENT INFRINGEMENT**
) **JURY TRIAL DEMANDED**

For its Complaint, Ameranth, Inc. ("Ameranth"), by and through the undersigned counsel, alleges as follows:

THE PARTIES

1. Ameranth is a Delaware corporation having a principal place of business at 5820 Oberlin Drive, Suite 202, San Diego, California 92121.

2. Defendant DoorDash, Inc. ("Defendant") is a Delaware company, with, upon information and belief, an office in Pittsburgh, Pennsylvania where its engineering team is focused on activities directly related to the infringement allegations herein: Defendant is "focused on core platform technologies that drive our delivery logistics platform and solve some of our team's largest distributed systems challenges." Brian Bailey, "Pioneering DoorDash's Platform Evolution in Pittsburgh," Oct. 21, 2021 (available at <https://doordash.engineering/2021/10/21/pioneering-doordashs-platform-evolution-in-pittsburgh/> (last accessed Dec. 5, 2022)); *see also* <https://doordash.engineering/locations/pittsburgh/> (last accessed Dec. 5, 2022).

JURISDICTION AND VENUE

3. This action arises under the Patent Act, 35 U.S.C. § 1 *et seq.*

4. Subject matter jurisdiction is proper in this Court under 28 U.S.C. §§ 1331 and 1338.

5. Upon information and belief, Defendant conducts substantial business in this forum, directly or through intermediaries, including: (i) at least a portion of the infringements alleged herein; and (ii) regularly doing or soliciting business, engaging in other persistent courses of conduct and/or deriving substantial revenue from goods and services provided to individuals in this district.

6. In addition to the engineering office opened in Pittsburgh, which is focused on the platform/framework technology of the '130 patent claims as explained and admitted below, Defendant employs hundreds of delivery Dashers', throughout the district, all of which use technology that is an integral part of Defendant's infringement of the '130 patent claims.

7. Venue is thus proper in this district pursuant to 28 U.S.C. § 1400(b).

THE PATENT-IN-SUIT

8. On March 15, 2022, U.S. Patent No. 11,276,130 (the "'130 patent"), entitled "Information Management and Synchronous Communications System," was duly and lawfully issued by the U.S. Patent and Trademark Office. A true and correct copy of the '130 patent is attached hereto as Exhibit A.

9. Ameranth is the assignee and owner of the right, title and interest in and to the '130 patent, including the right to assert all causes of action arising under said patent and the right to any remedies for infringement of it.

AMERANTH BACKGROUND

10. Inventor and current President Keith McNally founded Ameranth more than twenty-five years ago to develop and provide innovative wireless, real-time communications technology and associated computer software and hardware systems that would enhance the efficiency of hospitality-focused enterprises such as hotels, restaurants, entertainment and event

ticketing venues and similar establishments.

11. Ameranth's inventions and development of these systems has already resulted in the issuance by the USPTO of eight patents: 6,384,850 (the "'850 patent") (issued 2002), 6,871,325 (the "'325 patent") (issued 2005), 6,982,733 (the "'733 patent") (issued 2006), 8,146,077 (the "'077 patent") (issued 2012), 9,009,060 (the "'060 patent") (issued 2015), 9,747,651 (the "'651 patent") (issued 2017), 10,970,797 (the "'797 patent") (issued 2021) and the '130 patent (issued 2022). Further, two additional patents are pending.

12. The 2022-issued '130 patent is directed to different technology and solutions than the earlier patents and it is the lead patent of Ameranth's new parallel-operational-capable, web server network and distributed computing-based patent family, based upon the new and expanded teachings disclosed in the July 26, 2005 patent application, which is a continuation-in-part of the '077 patent. The claims of the '130 patent are not directed to formatting and synchronizing a graphical user interface (GUI) with wireless handheld computers, as is further explained below.

13. In addition to multiple technology awards received for and widespread sales and deployments of its own products and systems, Ameranth's patents have been licensed to forty-seven sophisticated royalty-paying entities.

TECHNOLOGY BACKGROUND

a. Technological Problems in 2005

14. Ameranth incorporates in its entirety the Declaration of Keith R. McNally Regarding: U.S. Patent: 11,276,130, attached hereto as Exhibit B, into the pleadings here.

15. As explained by Mr. McNally, the inventor and a person of ordinary skill in the art, in early 2005, Ameranth was presented with two new, strategic opportunities, one from Holiday Inn Hotels and the other from Zagat Survey LLC. Both of these enterprise level opportunities

presented new and unprecedeted technology challenges including the need for parallel operational capabilities. Ameranth recognized it needed that which did not exist at the time—a full, intelligent, enterprise level, web server-based back end solution/service with parallel operational capabilities.

16. Both companies required very similar operational challenges/requirements. The solutions needed to be enterprise level, nearly entirely automatic/autonomous, extremely reliable, redundant, operating 24 hours a day, 7 days a week, 365 days per year, while being easy to learn/use by non-expert staff/customers, without creating new operational procedures/requirements, and all while positioning the system to be ready to exploit the rapidly emerging smart phone technology. No such system/solution existed in 2005 which is why they came to Ameranth, since Ameranth was a recognized and widely praised technology innovator and known as a company that could design/invent and move/develop/act rapidly and affordably.

17. Ameranth's eHost platform deployed for Holiday Inn incorporated key aspects of the inventions claimed in the '130 patent. McNally Decl. at ¶¶ 14-17.

18. Several of the features claimed in the '130 patent were also incorporated in Ameranth's Magellan Restaurant Reservations System in November 2005. McNally Decl. at ¶¶ 18-19.

19. Mr. McNally invented a new, unique and ordered combination of technologies including internet-based web server/cloud-based datacenter/hosted system with distributed computing, and the new and non-conventional multi-modes of contact and parallel operational capabilities' functionality, and its layered architecture and with distributed but linked databases, yet operating together as a master database and which learns, was intelligent and acts/decides intelligently. This ordered-combination-based invention is what is claimed in the '130 patent. The

'130 patent's new multi-modes of contact to/with both wireless handheld equipped consumers/customers and with the restaurants/hotels, provides resiliency, flexibility and reliability, and its internal and external API's accommodate and integrate with current and future hospitality and non-hospitality external systems.

20. With national scale, hosted, web server-based deployments and the requirements for extreme reliability, the 24x7x365 availability of the system across thousands of locations, and enabled for multiple and linked web server data centers to prevent the system from going down due to a power outage or other such failure mode, consequently, the distributed computing and claimed master database while acting intelligently approaches with layered architectures and seamless interconnectivity was essential.

21. Because speed/time to market was also a high priority, Ameranth was also challenged to develop interim solutions if required—while deferring, when/if appropriate to later versions—any integrations or special features not essential for the initial, primary operational features/objectives. This required planning and integrating the layered architecture and external API into the system framework/design to provide for continual growth and considerations into the overall system framework/architecture. At the time of the inventions claimed in the '130 patent, no such integrated system or system of systems existed.

22. The claimed inventions of the '130 patent and their new technical solutions preceded what later and more currently have become known as e.g. machine learning and/or a microservices-based architectural approach. McNally Decl. at ¶¶ 25, 27.

23. After conceiving the advances, innovations and new, system architecture that powered and enabled these new systemic solutions in late 2004 into early 2005, Mr. McNally filed a continuation-in-part patent application on July 26, 2005, providing extensive new

teachings/guidance to persons of skill in the art to expand upon the earlier teachings/disclosures of his original patent specification, filed on September 21, 1999. The teachings were and are targeted to teach new advancements on the back end and architectural side of the systems. This continuation-in-part application is the parent to the '130 patent.

24. Mr. McNally added text about some additional functionality at the end of the prior Abstract, emphasizing the importance of new enhancements supporting the multiple modes of contact enhancements, he modified the primary prior systemic architecture Figure 9 into Figure 10, and he added a short addition to the prior specification (*see* '130 patent at 13:2-5), but then focused on the extensive new 2005 systemic and architectural innovations disclosed in the '130 patent at col. 13, l. 31 to col. 18, l. 57.

25. The advantages of and teaching/explaining in columns 13-18 of the '130 patent specification via non-software language specific examples evidence the multiple modes of contact advancement/concept, because a person of ordinary skill in the art can follow the example based specification teachings and then at the appropriate time and in the appropriate programming language as of that date or any date program/code this functionality in the software language then preferred and used. This enhancement of the multi-modes of contact improved the web server functionality as part of the overall framework design and was/is essential to achieving the system reliability and autonomous enterprise level functionality, as was required for both the eHost and Magellan systems. Without such functionality combined with the learning/intelligence of the system, the first instance of a communication failing and/or being unanswered would immediately end that communication flow and prevent that hospitality task from being timely completed, thus degrading the system and its reliability and reducing merchant/customer satisfaction. Further, once the system learns that e.g. a particular contact mode is ineffective, it can then avoid even trying that

and thus eliminate that wasted computer resource and increase the system's efficiency. This new learning and intelligence functionality and its application as in the '130 patent's claims—e.g. the "intelligently learns, updates and stores" and "intelligently choose and apply" terms of the '130 patent claims— was new, non-conventional and improved the efficiency of prior web servers and the overall connected network by eliminating computer resources previously wasted on actions (that were not required toward the claimed requirement of completing the hospitality tasks as in the '130 claims) and by eliminating these wasted actions, less computing resources were required; thus improving CPU processing and efficiency. Of special importance to the multiple modes of contact was the '130 patent's claimed invention, in late 2004, that integrating text and chat into actual deployed/operational systems would offer technical and operational benefits. This was a new and important innovation since at this time, texting (while loved by teenagers) was scorned by most adults, but its limited use was a stand-alone function, not actually integrated directly into an operational system and the execution and completion of hospitality tasks. Mr. McNally was the first to recognize this and actually teach the ability to integrate texting/chatting functionality into deployed and operational hospitality task based systems and make them, optionally a part of the completion of those tasks when/where appropriate, as evidenced by the disclosure and claims of the '130 patent. McNally Decl. at ¶¶ 25, 27.

26. As Mr. McNally further recognized, and which is specifically taught in the continuation-in-part additions of and claimed in the '130 patent to achieve and teach the overall systemic enhancements to prior web server-based systems while providing a totally integrated, hosted, ordered combination systemic solution and one capable of interfacing with wireless handheld computers and via multiple modes of contact, along with the framework and layered approach of Figure 10 of the '130 patent, the claims and teachings of the '130 patent guide/teach a

person of skill in the art to pursue/architect a distributed computing, distributed-but linked database system, which mirrors and teaches the new systemic framework approach, as a new and ordered combination which now, many years later is often now deemed as a microservices-based approach. '130 patent at 14:55-60, 16:61-66, 18:18-24, 18:29-32, Fig. 10.

27. A distributed database is a database that is distributed across multiple computers and devices in a network. Such an architecture can provide tremendous benefits for users. As would be well-known to a person of ordinary skill in the art ("POSITA") prior to 2005 and prior to the new and non-conventional '130 patent claimed inventions, however, there were significant challenges for system designers to be able to successfully implement such a distributed database. For example, a major challenge is that of achieving the design goals of consistency, availability, and partition-tolerance:

- **Consistency.** Consistency means that all devices on the network see the same data at the same time. For this to happen, whenever data is written to one node, it must be immediately forwarded and replicated to all the other nodes in the system before the write is deemed successful.
- **Availability.** Availability means that any device making a request for data gets a response, even if one or more other nodes are down. Another way to state this is that all working nodes in the distributed system return a valid response for any request.
- **Partition-tolerance.** A partition is a communications break within a distributed system, such as a delayed or disconnected link between nodes, that disconnects one or more nodes from other nodes in the network. Partition-tolerance means that a cluster of nodes must continue to work despite any communication breakdowns between nodes in the system.

b. '130 Patent's Claimed Inventions Solved These Technological Problems

28. These 2005 operational challenges required an entirely new systemic technical approach/solution including parallel operational capabilities and one which operated as an ordered combination of technical advancements to create an intelligent and integrated internet enabled system that met all of these requirements and more, while designed for growth/expansion as well. As claimed and disclosed in the '130 patent, a layered framework/architecture upon which the pieces of the system would be integrated together was needed.

29. The inventions claimed in the '130 patent are vastly different from the claimed inventions in Ameranth's earliest patents. Unlike the claims in Ameranth's earliest patents, the claims of the '130 patent provided improved solutions for web servers and distributed database systems with parallel operational capabilities.

30. On their face, a POSITA would understand that the claims of the '130 patent are vastly different and directed to an entirely different concept and technological problem from the earlier patent claims invalidated in *Apple*, *Domino's*, and *Olo*. Exhibit C shows a representative claim from each of those cases and claim 1 of the '130 patent. Unlike the invalidated claims, the claims in the '130 patent are for and improve web server computers and include specific details for implementing and improving the web server computers, which result in a technological improvement to a network of distributed computing systems, including parallel operational capability, because the claimed web server is able to achieve improvements in consistency, availability, and partition tolerance.

31. Claim 1 of the '130 patent includes a preamble that is limiting and that defines the "said web server" as "an intelligent web server, with multi-modes of contact, multi-communications protocols, multi-user and parallel operational capabilities."

32. Claim 1 of the '130 patent recites an ordered combination and includes each of the following elements:

- a web server with multi-modes of contact, multi-communications protocols, multi-user and parallel operational capabilities;
- at least one hospitality food/drink ordering software application
- an advanced master database, with its own database API; and its own learning and intelligence capabilities
- Middleware/Framework Communications Control Software (MFCCS), which enables at least one web server to communicate with at least two remote handheld computers and for multiple modes of contact and multiple communications protocols; and
- at least one external software API, which integrates the hospitality software application and the MFCCS with the Internet, at least one external, non hospitality application while importing POS databases into and leveraging the advanced master database including the automatic reflection into the menu tree file structure.

This combination of the above-listed elements in the '130 patent overcomes the challenge of simultaneously achieving consistency, availability, and partition-tolerance for a distributed database by changing the preconditions inherent in the environment for which these goals were typically articulated. For instance, rather than accepting the underlying assumption that there is only a single type of network and network protocol for connecting the devices in a distributed database design, the '130 patent introduces an approach utilizing multi-modes of contact, multi-communication protocols, and parallel operational capabilities for its system, and combines this with the above-listed elements. Accordingly, the '130 patent claims an invention that can effectively achieve consistency and availability, as well as partition-tolerance, for example, such that when a communication link is down in one communication modality or protocol, the system can then utilize another communication modality or protocol that is not down. This combination of elements of claim 1 is supported in the specification, e.g., in embodiments disclosed in Fig. 10 at col. 16, ll. 25-40 and col. 18, ll. 58-67 of the '130 patent, for instance, which teach multi-modes of communication (e.g., instant messaging, text messaging, email, web pages, pages, facsimiles,

text to voice, voice to text, and/or touch tone recognition, message, mobile app message, ethernet, paging (e.g., 27MHz/318MHz), Wi-Fi (802.11), and web links), multiple communications protocols (e.g., HTTP, 802.11, Paging, Ethernet, and WAN Wireless protocols), and parallel operational capabilities, together with a MFCCS, linked databases, servers, and handheld devices.

33. It cannot be reasonably argued that claim 1 does not claim improvements to the claimed web server computers, when claim 1 of the '130 patent explicitly recites that its new combination of elements provides the functionality of "improving efficiency while eliminating the necessity of continually querying or checking every tree branch in the master menu tree file structure when responding to remote user requested tasks and/or other inputs." This "eliminating the necessity of continually querying or checking" limitation claims a system that simultaneously achieves improved consistency and availability in a distributed database. That is, it achieves consistency, since one node in the system does not need to check or continually check another node in the system to know that its data is consistent with the data of the other node, and, further, the updated modifiers are, as recited in the claim, "automatically reflected throughout the master menu tree file structure." Similarly, this limitation achieves availability, since it implies that there is no need to continually be checking if another node is available or not. Moreover, the claimed invention of the '130 patent provides partition-tolerance through its multi-modes of contact, multi-communications protocols, multi-user and parallel operational capabilities, whereby a partition in one mode of communication (such as the Internet) can be overcome by communicating over another alternate modality (such as wireless text messaging).

34. The '130 patent discloses how the claimed invention achieves improvements in both consistency and availability:

According to various embodiments of the present invention, messaging (e.g., wireless text messaging and/or wireless instant messaging) and/or text-to-voice

functionality may be employed, for instance, in appointment, waitlist, and/or reservation operations. Such functionality might, in various embodiments, involve messaging (e.g., wireless messaging), text-to-voice, and/or two-way interactivity, and/or may involve communication via landline telephones, cellular telephones, and/or wireless devices.

'130 patent at 13:31-40.

35. The claimed multi-modal communication is also taught as being performed in parallel with other operations:

A computer operating to communicate with the entity as discussed herein might, for example, be dedicated to performing such operations. As another example, such a computer might be one performing other tasks (e.g., acting as a web server). It is noted that, in various embodiments, one or more rules may be followed in communicating with the entity and/or the user.

Id. at 17:35-41. Thus, the above passage expressly ties the consistency and availability achieved in the claimed invention of the '130 patent to its multi-modes of communication, provides partition-tolerance.

36. The '130 patent and its learning/intelligence further discloses the benefits and functionality of its claimed multi-modal communication approach as follows:

A communications control program monitors and routes all communications to the appropriate devices. It **continuously monitors the wireless network access point and all other devices connected to the network** such as pagers, remote devices, internet Web links and POS software. Any message received is decoded by the software, and then routed to the appropriate device. No user action is needed during operation of the software once the application has been launched.

'130 patent at 10:48-56 (emphasis added).

37. Claim 1 of the '130 patent includes the following limitation:

the external software API integrating with and leveraging the advanced master database to enable the importing of food/drink menus including required and non-required modifiers which are then **automatically reflected throughout the master menu tree file structure**, improving efficiency while eliminating the necessity of continually querying or checking every tree branch in the master menu tree file structure when responding to remote user requested tasks and/or other inputs;

(emphasis added). This limitation (the "automatic reflection" limitation) recites technological

improvements to computers and is not reciting a routine or conventional element. It saves CPU cycles and network traffic for updating menu trees and similar tree file structures, as it requires only one insertion or deletion rather than performing insertions or deletions at every node tagged with the same modifier name, which improves the functioning of computers in any context that involves tree file structures where insertions or deletions may involve node tags or node types rather than individual nodes, which is a broad scope of applications. Indeed, the "automatic reflection" limitation in claim 1 itself recites, "improving efficiency while eliminating the necessity of continually querying or checking every tree branch in the master menu tree file structure when responding to remote user requested tasks and/or other inputs."

38. More specifically, the "automatic reflection" limitation recites a "master menu tree file structure," where an update to a single tree-node type modifier is automatically reflected throughout the tree. *See, e.g.*, '130 patent at 9:48-62. That is, the imported modifier is reflected at each node with the same modifier name. Such a scheme is different from single-position methods for updating tree file systems, such as embodied in data structure libraries like JDSL and in tree-structured file systems, such as in Athos, MacOS, and Linux/Unix.

39. The "automatic reflection" limitation and inventive concept of the '130 patent as part of its ordered combination provided computer improvements and was not routine or conventional in 2005, as stated by the inventor and then confirmed by the patent examiner in the Notice of Allowance issued at the USPTO:

The following is an examiner's statement of reasons for allowance:

The Examiner is in agreement with arguments submitted by the Applicant on 11/16/21. Applicant's arguments, in further view of the Examiner's amendments above, render the claims novel and unobvious. Therefore, the Examiner is allowing the case.

Exhibit D.

40. The "arguments submitted by the Applicant on 11/16/21" to which the Examiner referred to in paragraph 39 are attached hereto at Exhibit E, and they included the following text:

Independent claim:

- 1.) Remotely initiated and then intelligently applies them
- 2.) For remote hospitality users
- 3.) Middleware/Framework Communications Control Software (MFCCS)
- 4.) Which integrates with and leverages the advanced master database*
- 5.) To enable the importing*
- 6.) Including required and non-required modifiers*
- 7.) Which are automatically reflected throughout the master menu file structure*
- 8.) While eliminating the necessity of continually querying or checking every tree branch in the master menu tree file structure*
- 9.) Enabled to support the completion of those tasks

*(Further, these added limitations reflect their ordered combination, in an entirely new, added claim element, the how of which is taught to a PHOSITA only via the applicant's specification/figures, and as integrated into the newly amended independent claim as a whole.)

41. Claim 1 of the '130 patent also has the following limitation:

Middleware/Framework Communications Control Software (MFCCS) which enables via its centralized system layer architecture the at least one said web server computer to communicate with two or more remote wireless handheld computers and for multiple modes of contact, multiple communications protocol functionality, integrated with the master database and with the at least one hospitality food/drink ordering software application;

This limitation (the "middleware/framework" limitation), including the centralized system layer architecture, recites further technological improvements to computers and is not reciting a routine or conventional element. The claimed middleware/framework architecture for a food/drink ordering distributed system for the hospitality industry would speed up and simplify the development, testing, deployment, and performance of the hospitality applications that are built on top of it. By providing a centralized system layer architecture, multi-modes of contact and multiple communications protocol functionality, which are integrated with the master database and with the at least one hospitality food/drink ordering software application, the

"middleware/framework" limitation recites technological improvements to web server computers for food/drink ordering applications in the hospitality industry.

42. Middleware will impact many parts of an application system built atop it and can be a make-or-break factor for the success of such systems, so great care should be undertaken in their design. Developing a middleware/framework therefore requires the development of a comprehensive design, which provides the layer architecture for the middleware/framework and describes its functionality, and the '130 patent provides such a design for a non-routine and unconventional middleware/framework for the hospitality industry.

43. The teachings of Figure 10 are specifically incorporated into the '130 patent claims, along with its layer architecture, via the inventor, distinguishing prior art, based upon it, during prosecution on November 21, 2021. *See Exhibit E at pp. 9-11 (Response to Office Action).*

44. Figure 10 and accompanying disclosures in the specification of the '130 patent disclose a system diagram and design description for the claimed middleware/framework for a distributed system for food/drink ordering applications in the hospitality industry. *See, e.g.,* the '130 patent at Fig. 10, 3:52-61, 14:40-60, 15:25-41, 15:42-46, 16:41-60, 16:61-17:4, 17:5-16, 18:19-32, 18:52-57. These disclosures describe multiple communication modes, distributed computing components (including a server and multiple clients), and synchronization functionalities. These disclosures are for a non-routine and unconventional middleware/framework for distributed food/drink ordering applications in the hospitality industry.

c. A Person of Ordinary Skill in the Art Recognizes Technological Improvements of the '130 Patent's Claimed Inventions

45. Ameranth incorporates in its entirety the Declaration of Michael T. Goodrich, Ph.D. Regarding U.S. Patent No. 11,276,130 ("Goodrich Decl."), attached hereto as Exhibit F, into the pleadings here.

46. As confirmed by Dr. Goodrich, using the external software API integrating and leveraging the advanced master database of the claimed invention of the '130 patent, CPU cycles and network traffic are decreased, which improves the functioning of the web server. Goodrich Decl. at ¶¶ 42-48.

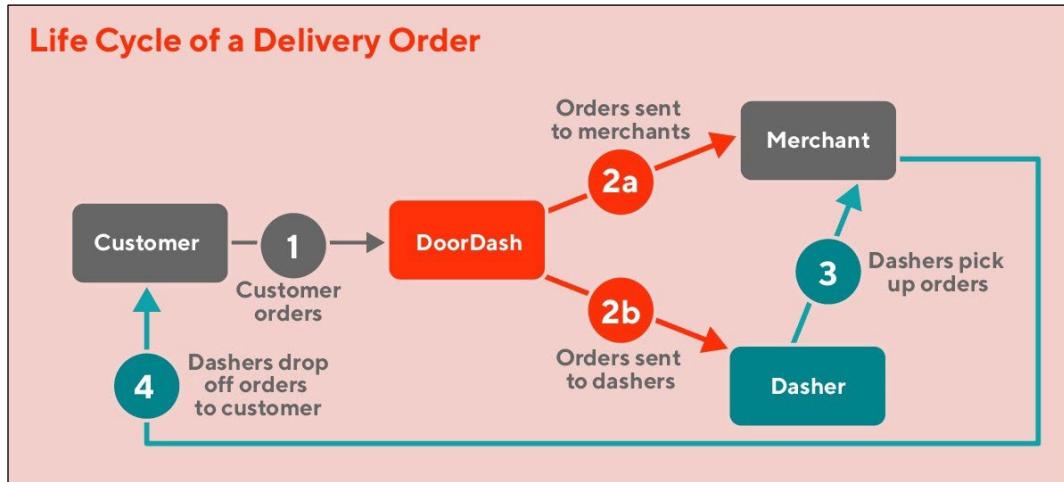
47. A person of ordinary skill in the art would understand this "eliminating the necessity of continually querying or checking" limitation of claim 1 of the '130 patent to be claiming that its system effectively achieves consistency and availability in a distributed database. That is, it effectively achieves consistency, since one node in the system does not need to check or continually check another node in the system to know that its data is consistent with the data of the other node, and, further, the updated modifiers are, as recited in the claim, "automatically reflected throughout the master menu tree file structure." Similarly, this limitation effectively achieves availability, since it implies that there is no need to continually be checking if another node is available or not. Moreover, a person of ordinary skill in the art would understand that the invention of the '130 patent effectively provides partition-tolerance through its multi-modes of contact, multi-communications protocols, multi-user and parallel operational capabilities, whereby a partition in one mode of communication (such as the Internet) can be overcome by communicating over another modality (such as text messaging). *See* Goodrich Decl. at ¶¶ 55-65.

48. The "web server" of claim 1 of the '130 patent, and as it is defined in the preamble of the claim, is non-conventional, and is improved and specialized to involve multi-modes of contact, multi-communications protocols, multi-user, and parallel operational capabilities. Goodrich Decl. at ¶¶ 66-67.

DOORDASH BACKGROUND

49. Defendant was formed in 2012 by four Stanford students, Evan Charles Moore, Andy Fang, Stanley Tang and Tony Xu, who is the CEO today. Initially, understandably and admittedly, like most startups, they had little technology, nor experience nor the vision for the technology needed for a true, enterprise scale, system as DoorDash has become today. But they did have drive and vision and through that, they have become the number one food delivery company in the U.S. and in the world. As explained below, over time, Defendant and its engineering team realized that they needed an integrated web server-based solution, inclusive of the teachings of the '130 patent and its claims.

50. Below is a snippet of a screenshot from a video posted by Defendant and entitled "DoorDash Technical Showcase Event- Logistics Team" (available at https://www.youtube.com/watch?v=Um_s0AUjZd4 (last accessed Dec. 5, 2022)):

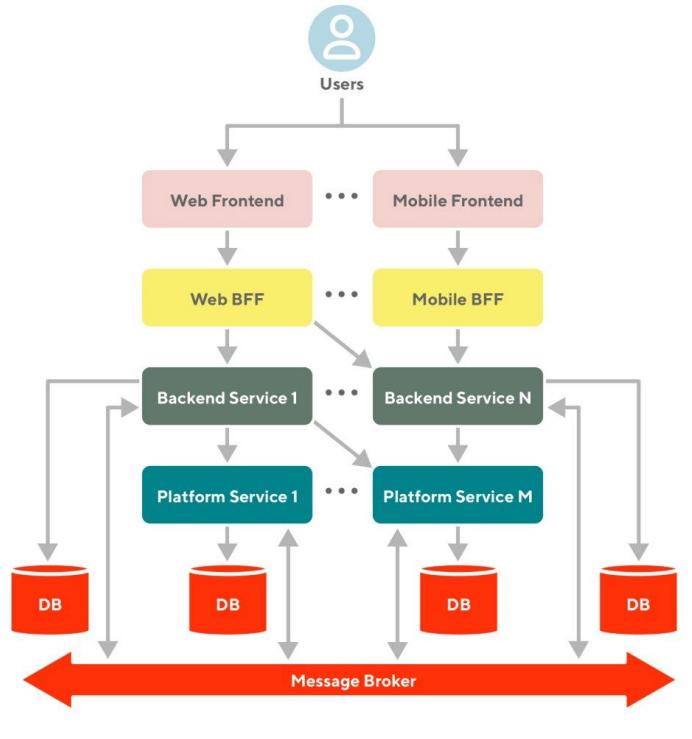


51. The article "Future-proofing: How DoorDash Transitioned from a Code Monolith to a Microservice Architecture" (available at <https://doordash.engineering/2020/12/02/how-doordash-transitioned-from-a-monolith-to-microservices/> (last accessed Dec. 5, 2022)), contains the following text (bullet points added), reordered for purposes of this complaint:

- "DoorDash began its venture into food delivery in 2013. At that time, the mission from an engineering standpoint was to build a fast prototype to gather delivery orders and distribute them to a few businesses through basic communication channels like phone calls and emails. The application would need to accept orders from customers and transmit those orders to restaurants while at the same time engaging Dashers to pick up orders and deliver them to customers."
- "Although the monolithic architecture was a valid solution to enable agile development in the early phases, issues started emerging over time. This is a typical scenario in the lifecycle of a monolith that occurs when the application and the team building it cross a certain threshold in the scaling process. DoorDash reached this point in 2017, which was evident by the increasing challenge of building new functionalities and extending the framework.

Eventually, the DoorDash application became somewhat brittle. New code sometimes caused unexpected side effects. Making a seemingly innocuous change could trigger cascading test failures on code paths that were supposed to be unrelated."

- "*In 2019, DoorDash's engineering organization initiated a process to completely reengineer the platform on which our delivery logistics business is based.*"
- "Originally developed as a monolithic codebase, the company's business growth in 2019 unveiled the weaknesses of our development model, including issues such as growing developer ramp up time, longer waits for test completion, and overall higher developer frustration as well as increased brittleness of the application. After some debate, the company began planning to transition the monolith to a microservice architecture."
- "After these phases, a multi-layered microservice architecture emerged:



52. The article "2020 Hindsight: Building Reliability and Innovating at DoorDash"

(available at <https://doordash.engineering/2020/12/23/2020-engineering-highlights/> (last accessed Dec. 5, 2022)), includes the following text (bullet points added):

- "Highlights from this year include work on our microservices architecture and migrating business logic, a process begun in 2019, improving our reliability metrics on a platform facilitating millions of deliveries per day. To support the many data-driven aspects of our business, we built new pipelines and found other ways to improve our data infrastructure's speed, reliability, and usability."
- "The continued growth of DoorDash's business brought us to the realization in 2019 that we needed to fundamentally re-architect our platform. Our original monolithic codebase was stressed from the need to facilitate millions of deliveries per day, while a growing engineering organization meant hundreds of engineers working to improve it. To support our scale, we began migrating from the original codebase to a microservices architecture, work that continues through 2020, improving reliability and developer velocity."

53. After recognizing its technological problems as discussed above and envisioning

what was needed to address them, Defendant not only initiated technical developments, but it also

sough patent protections for the concepts they believed to be new and non-conventional as of 2018/2019. Defendant filed for and was awarded multiple patents for inventive concepts it believed it was the first to invent and the inventors of the claimed inventions in those patents signed sworn statements attesting to those beliefs.

54. However, Defendant and the inventors of Defendant's patents were wrong, as Ameranth had invented many of those concepts long before they did, and Defendant's filing for and receiving these patents are direct admissions that Ameranth's inventive concepts were improvements to computers and were thus not conventional 14 years earlier in 2005.

55. Exemplary statements from four exemplary Defendant patents evidencing these admissions are below:

a. U.S. Patent No. 11,010,819, entitled, "'Application Programming Interfaces for Fulfillment Services," filed on May 9, 2018, issued on May 18, 2021, attached hereto as Exhibit G:

Abstract: "In some examples, a computing device exposes, to a merchant device, one or more Application Programming Interfaces (APIs) for accessing a delivery service. The computing device receives, from the merchant device, via the one or more APIs, a request regarding delivery of an order specified by a customer for delivery from the merchant. The computing device may send a communication to a courier to instruct the courier to deliver the order. The computing device may receive, from the merchant device, via the one or more APIs, a request for a delivery status of the order received via a user interface. The computing device may determine the delivery status of the order based at least partially on location information received from the courier, and sends the delivery status to prompt the merchant device to present the delivery status in the user interface."

Col. 2, ll. 11-24: "The technology described herein provides a system and environment to enable entities to utilize courier services provided by a service provider. In some examples, the service provider exposes the courier services to a computing device associated with a merchant, buyer, and/or others using one or more Application Programming Interfaces (APIs) provided by the service provider. In some instances, the service provider may be a third party that operates remotely and/or independently from the

merchant, buyer, and/or others. The one or more APIs may enable merchants and/or others to automatically integrate the courier services into technologies used by the merchants and/or others in order to facilitate delivery of items that are offered for acquisition by the merchants.

Col. 3, ll. 44-52: "In many instances, the techniques and environments described herein provide one or more APIs to access courier services provided by a service provider. That is, the one or more APIs may provide entities with a flexible structure to integrate courier services into technologies of the entities."

Col. 3, ll. 60-66: "Moreover, the techniques and environments provide a flexible structure to modify the underlying technology used by the service provider to implement the courier services. In other words, the underlying technology of the courier services may be updated in a unified and/or simplified manner, without requiring an update to technologies implemented by merchants, buyers, and/or others."

- b. U.S. Patent No. 11,205,212, entitled "Integration of Functionality of a Fulfillment Service Provider into Third Party Application, filed on May 8, 2019, issued December 21, 2021, attached hereto as Exhibit H:

Abstract: "Integrating a fulfillment service provider into a third-party application via an Application Programming Interface (API) is described. In an example, a computing device associated with a fulfillment service provider can determine, based at least in part on an indication of an interaction between a user and a third-party application, that the fulfillment service provider has been initialized. In one example, functionality associated with the fulfillment service provider can be accessible to the third-party application via an API."

Col. 2, ll. 15-24: "Techniques described herein are directed to the integration of functionality of a fulfillment service provider into a third-party application, for instance, via an Application Programming Interface (API). In an example, third-party developers can integrate functionality of a fulfillment service provider into their own software or web services via an API provided by the fulfillment service provider. The fulfillment service provider can provide food-preparation services, food-ordering services, food-delivery services, and so on."

Col. 3, ll. 54-61: "As will be described below, techniques described herein can be implemented via a communication network that enables third-party applications to communicate with server(s) that are associated with a fulfillment service provider. Techniques described herein thus utilize the technical capability of such a communication network to enable the

integration of services and/or functionalities that are available via different service providers into a single access point."

Col. 4, ll. 6-16: "The third-party applications can exchange data with the server(s) that host the fulfillment service provider, using the technical capabilities of communication networks, to provide such functionality and/or services. In many examples, as described below, the use of fulfillment service provider functionality and/or services can be dynamic and individualized for each of the third-party applications, thereby providing more efficient use of functionalities and/or services available via the fulfillment service provider. As such, techniques described herein are directed to improved performance of computing systems."

Col. 4, ll. 38-60: "Current technology requires users to transition between applications to access different services, and in some cases where the users do not have accounts with these services, users have to first generate accounts with those services. For instance, if a user is watching a video via a content providing application and wants to order a pizza, the user is required to exit the content providing application, determine a service that would deliver the pizza, and then open another application for ordering the pizza. Such a transition causes friction for users and, additionally, consumes computational resources, as described below. That is, existing capabilities of computing devices are inefficient. Techniques described herein provide a specific improvement in the capabilities of computing devices. For instance, instead of requiring a user to open two separate applications to access two different services, such is the case with existing capabilities of computing devices, techniques described herein are directed to the integration of services and/or functionalities via API(s). Accordingly, the user need not toggle between the third-party application and an application associated with the fulfillment service provider, for example, to access services and/or functionalities provided by the different service providers.

Col. 5, ll. 18-27: "Additional details associated with the server(s) 102 and the user device 106 are described below. In at least one example, the server(s) 102 can be associated with a fulfillment service provider, which can provide one or more fulfillment services. For instance, the server(s) 102 can be associated with one or more functional components, including, but not limited to, a fulfillment module 108, which can be configured to facilitate food-ordering services, food-delivery services, food-preparation services, combinations of the foregoing, and the like."

Col. 5, ll. 35-41: "In at least one example, the fulfillment service provider can be associated with a plurality of devices 112 used by partners and/or patrons of the fulfillment service provider. Partners can include merchants or other entities providing, among other services, food-ordering services, food-delivery services, food-preparation services, combinations of the foregoing, and the like."

Col. 6, ll. 26-35: "In some examples, the fulfillment module 108 can track timing of order preparation and/or delivery schedules to batch order preparation and/or delivery. That is, in some examples, the fulfillment module 108 can receive data indicative of actions of the partners of the fulfillment service provider (e.g., via interactions with the fulfillment user interface 114) and can determine when to batch multiple deliveries into a single delivery for a courier (e.g., delivering food) or batch multiple orders of a food item into a single preparation by a cook."

c. U.S. Patent No. 11,037,254, entitled "Item Selection Based on User Interactions," filed on June 11, 2019, issued on June 15, 2021, attached hereto as Exhibit I:

Abstract: "In some examples, a service device may receive, from buyer applications on respective buyer devices, communications indicating a number of times item information about a first item is presented in user interfaces on the buyer devices. The service device may further receive respective orders through the user interfaces, for the first item or other items."

Col. 1, l. 63 – col. 2, l. 1: "The technology herein provides a novel system that enables people to participate as couriers in a new type of crowdsourced service economy. The disclosed crowdsourcing systems include new types of interactive networks and apparatuses that enable non-abstract and novel innovations for fast delivery of items.

Col. 2, ll. 5-10: "Additionally, through the interaction of a plurality of computing devices, mobile devices, and location sensors that make up the system, some examples herein are able to select items for couriers to add to inventory in advance of receiving orders to enable fast delivery of the items to buyers when orders are received."

Col. 2, ll. 11-13: "In some examples, a service provider may provide a delivery service that enables buyers to order items, such as food items, that are delivered by couriers."

Col. 5, ll. 54-57: "In some cases, the buyer application 130 and the service computing device 102 may communicate with each other via one or more APIs (application programming interfaces).

Col., 6, ll. 38-43: "In some examples, the courier application 132 and the service computing device 102 may communicate with each other via one or more APIs. Alternatively, in other examples, the courier device 122 may receive the order information 112 via an SMS text message, a voicemail, a telephone call, or the like."

Col. 6, ll. 54-60: "Protocols for communicating over such networks are well known and will not be discussed herein in detail. Accordingly, the service computing device 102, the buyer devices 128, and the courier devices 122 are able to communicate over the one or more networks 106 using wired or wireless connections, and combinations thereof."

d. U.S. Patent No. 11,397,981, entitled "System and Method for Universal Menu Integration Interface," filed on December 30, 2019, issued on July 26, 2022, attached hereto as Exhibit J:

Abstract: "Systems and methods for universal menu integration. A digital key is issued to a vendor to access an interface. An uploaded menu is received from the vendor. The uploaded menu is in a universal format based on pre-determined criteria. The menu may be received from the vendor via HyperText Transfer Protocol (HTTP)."

Col. 1, ll. 11-22: "With the advent of on-demand delivery services, food delivery is becoming increasingly prevalent. Traditionally, people ordered food by first calling into a restaurant, ordering food from the delivery menu, and having the order delivered by the restaurant. However, such a service requires the restaurant to hire a delivery person. For many restaurants, hiring delivery people in house may be too costly to implement. Thus, for such restaurants, using a third party delivery service may be a better option. However, since each restaurant has its own unique menu, new restaurant integration into a third party delivery system is a time-consuming process that can take up to several months to complete."

Col. 1, ll. 42-51: "Aspects of the present disclosure relate to a method, computer readable medium, and a system for universal menu integration. The system comprises a processor, an interface, and memory. A digital key is issued to a vendor to access an interface. An uploaded menu is received from the vendor. The uploaded menu is in a universal format based on pre-determined criteria. The uploaded menu is posted for receiving online delivery orders. An online delivery order is received from a user device. Last, the online delivery order is transmitted to the vendor."

Col. 1, ll. 52-54: "In some examples, receiving the uploaded menu includes receiving a full menu from the vendor via a HyperText Transfer Protocol (HTTP) request."

Col. 2, ll. 2-6: "In some embodiments, the interface is an application programming interface (API) utilizing an API library including post, get, and patch functions. In some embodiments, the interface is an application programming interface (API) utilizing an API library including out of stock

and item availability fields. In some embodiments, the system is configured to receive menu updates after posting the uploaded menu."

Col. 2, ll. 7-11: "Additional advantages and novel features of these aspects will be set forth in part in the description that follows, and in part will become more apparent to those skilled in the art upon examination of the following or upon learning by practice of the disclosure."

Col. 3, ll. 33-41: "It should be noted that a connection between two entities does not necessarily mean a direct, unimpeded connection, as a variety of other entities may reside between the two entities. For example, a processor may be connected to memory, but it will be appreciated that a variety of bridges and controllers may reside between the processor and memory. Consequently, a connection does not necessarily mean a direct, unimpeded connection unless otherwise noted."

Col. 3, ll. 42-54: "A universal menu integration interface may allow multiple vendors or merchants, such as restaurants, with unique menus to upload their unique menu items to a single universal interface. As used herein, the term 'universal' is used interchangeably with 'open.' As used herein, the term 'vendor' is used interchangeably with 'merchant' to describe users of the described interfaces. A universal interface could be applied to arbitrary situations where inventories need to be synchronized between multiple parties. In addition, the menu structure would allow merchants to apply customization on their products. For each customization option, the structure allows merchants to apply an infinite amount of customizations."

Col. 6, ll. 5-22: "Once a menu is successfully processed and integrated within the logistics platform, the menu may be accessible by customers via a network such as the Internet. Customers may access one or more integrated menus using various applications on a client device, such as a personal computer or smartphone. As used herein, client devices used by customers may be referred to as customer devices. For example, a customer may use a web browser to visit a webpage with links to a plurality of menus. The customer may select items and place orders for delivery of such items."

COUNT I – INFRINGEMENT OF U.S. PATENT NO. 11,276,130

56. Ameranth repeats and realleges the allegations of paragraphs 1 through 55 as if fully set forth herein.

57. Without license or authorization and in violation of 35 U.S.C. § 271(a), Defendant is liable for infringement of claims 1-3 of the '130 patent by making, using, importing, offering for sale, and/or selling, an intelligent web server computer with multi-modes of contact, multi-

communications protocols, multi-user and parallel operational capabilities for use in completing remotely initiated hospitality food/drink delivery or pick up ordering tasks, including, but not limited to, the DoorDash system such as, but notwithstanding, the DoorDash system shown in the Iguazo framework/architecture diagram and in Defendant's Flywheel diagram (the "Accused Instrumentality"), because each and every element is met either literally or equivalently.

58. Upon information and belief, Defendant has used and tested the Accused Instrumentality in the United States, directly infringing one or more claims of the '130 patent.

59. The Accused Instrumentality satisfies each and every element of each asserted claim of the 130 patent, either literally or under the doctrine of equivalents. An exemplary preliminary claim chart illustrating infringement of claims 1-3 is attached hereto as Exhibit K, and incorporated herein by reference.

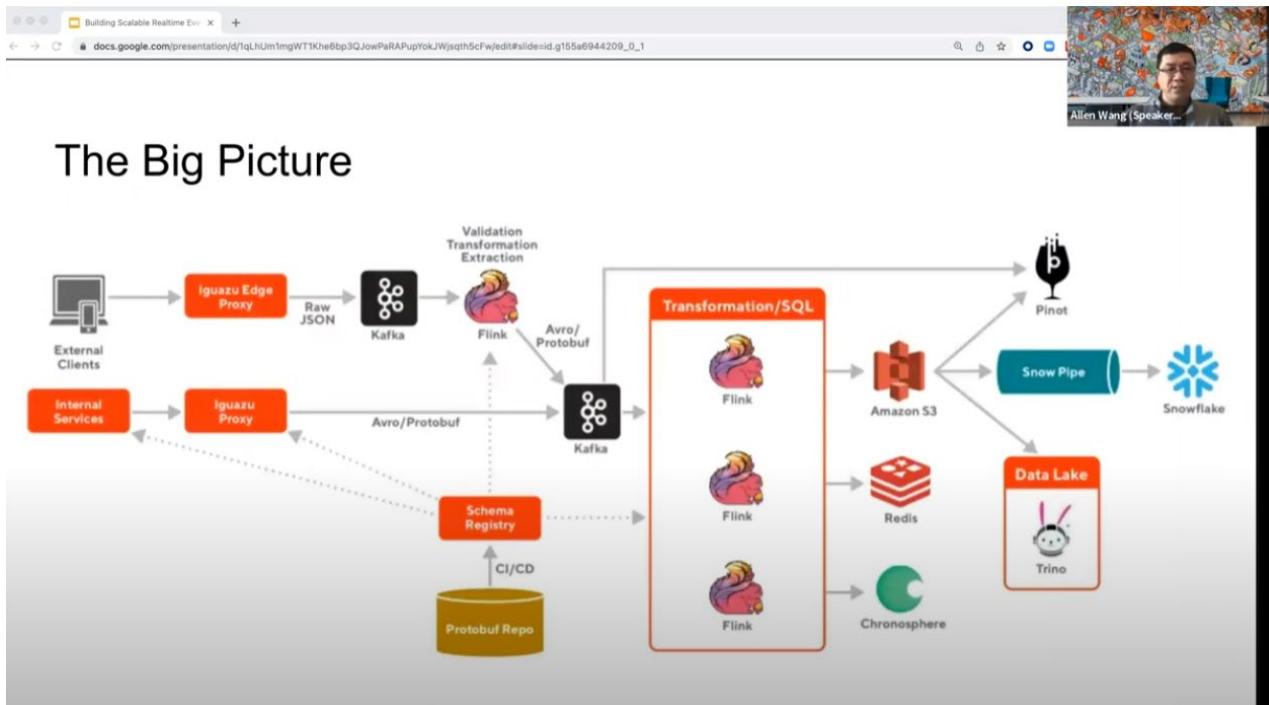
60. In addition to the extensive and detailed infringement chart, backed by 100+ evidentiary citations attached thereto, including extensive and detailed technical video presentations and case studies directly from the Defendant, Defendant has admitted to infringement in various public statements, not only as detailed in the extensive claims chart, but as shown below via an August 2022 interview of Defendant's Vice President of Analytics and Data Science, Jessica Lachs, and when combined with the Defendant's post about its recently created Iguazo "Big Picture" framework/architecture pictorially reflecting its infringement of the '130 patent claims. The Iguazo "Big Picture"(further illuminated by the statements by Ms. Lachs and many other Defendant engineering team leaders and developers as is shown in the evidence attached to the preliminary claim chart) clearly demonstrates, explains, and admits to Defendant's infringement of the '130 patent claims and is further explained as to the Iguazo system diagram below.

61. In the interview, a video of which is attached as Exhibit 98 to the preliminary claim chart and also available at <https://www.youtube.com/watch?v=g-1MaOCFgUc> (last accessed Dec. 5, 2022), Defendant's Vice President of Data Science admits:

- "And so for us, it's really about collecting as much information as we can about all sides of the marketplace, bringing all of that data together into a central data platform, where all of that data is accessible no matter the source. Whether it is coming from our production systems, transactional data, whether it is event data in our apps, whether that's the consumer app, the dasher app, the merchant app . . . whether it is coming from our CRM systems. All of that data needs to come in to one central place so that we can tie it together and use the insights together to create a 360 degree picture of what's happening on our platform and off our platform so that we can use that information not just to provide accurate menus and inventory for consumers but also so we can send the right email communications to consumers, to dashers, so that we really have a full picture of what's happening and can use that for personalization and to help all three sides of our marketplace really optimize that they are at their peak efficiency."
- "So, for us, we want data to be easily accessible to all the different teams that need access to it. Analytics, being one of the largest customers of data at DoorDash, of course, but the way we think about our data models is really about increasing accessibility and consistency to that data. So, having all of our data in one central place and making sure that it is high in performance and so like query speeds are fast and that data models are thoughtful, so that it makes it a lot easier for data scientists, analysts, operators, product managers to be able to query the data that is needed and use the data in our production, in our production systems as well. So, we try to be thoughtful about how we structure our data models and how we ensure that all of the different production systems tie together into that central, as you mentioned, that central data lake."

62. In the post "Building Scalable Real Time Event Processing" (available at <https://www.youtube.com/watch?v=BqbN-DD24SE> (last accessed Dec. 5, 2022)), a lead engineer at Defendant working on its real-time data infrastructure showed the "architectural overview of Iguazu." As a POSITA would understand, the Iguazu system diagram shows the DoorDash platform and "360 degree picture," and as illuminated by many other Defendant technical statements, papers, admissions and presentations in the attached exhibits, it depicts the framework and layered architecture of the '130 claims, clearly operating with/on clusters of the claimed web

servers and including its master database as is shown on the far right, the hospitality tasks from, e.g., consumers and Dashers and food importation inputs from the restaurants on the far left (i.e. their external clients) and the integration, API's communication protocols, and intelligence of the claimed '130 patent inventions in the center and including the interactivity and integration of the system elements in their ordered combination.



63. Ameranth is entitled to recover from Defendant the damages sustained by Ameranth as a result of Defendant's infringement of the '130 patent in an amount subject to proof at trial, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

JURY DEMAND

Ameranth hereby demands a trial by jury on all issues so triable.

PRAYER FOR RELIEF

WHEREFORE, Ameranth requests that this Court enter judgment against Defendant as follows:

- A. An adjudication that Defendant has infringed the '130 patent;
- B. An award of damages to be paid by Defendant adequate to compensate Ameranth for Defendant's past infringement of the '130 patent and any continuing or future infringement through the date such judgment is entered, including interest, costs, expenses and an accounting of all infringing acts including, but not limited to, those acts not presented at trial;
- C. A declaration that this case is exceptional under 35 U.S.C. § 285, and an award of Ameranth's reasonable attorneys' fees; and
- D. An award to Ameranth of such further relief at law or in equity as the Court deems just and proper.

Dated: December 9, 2022

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